

IN THE SENATE OF THE UNITED STATES.

LETTER

FROM

THE ACTING SECRETARY OF WAR,

IN RESPONSE

To Senate resolution of April 23, 1892, relative to the Portage Lake and Lake Superior Canal.

APRIL 26, 1892.—Referred to the Committee on Commerce and ordered to be printed.

WAR DEPARTMENT,
Washington, April 26, 1892.

SIR: I have the honor to transmit a letter from the Chief of Engineers, dated the 25th instant, together with a copy of a report of Maj. Charles E. L. B. Davis, Corps of Engineers, dated January 7, 1892, on the Portage Lake and Lake Superior Canal, which is furnished in response to a resolution of the Senate dated the 23d instant calling for the same.

Very respectfully,

L. A. GRANT,
Acting Secretary of War.

THE PRESIDENT OF THE UNITED STATES SENATE.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., April 25, 1892.

SIR: I have the honor to acknowledge receipt from the War Department of resolution of the 23d instant of the Senate of the United States directing the Secretary of War "to send to the Senate, as soon as may be, the report of Maj. C. E. L. B. Davis on the Portage Canal and Improvement Company."

In answer to the reference of the resolution to this office for report, there is inclosed herewith a copy of a letter of the 7th January, 1892, from Maj. C. E. L. B. Davis, Corps of Engineers, submitting, on account of Portage Lake and Lake Superior canals across Keweenaw Point, Michigan, estimate of amount required for completion of existing

project and estimate of amount that can be profitably expended in improvement of the canal during the fiscal year ending June 30, 1893.

The resolution of the Senate is herewith returned.

Very respectfully, your obedient servant,

THOS. LINCOLN CASEY,
Brig. Gen., Chief of Engineers.

Hon. S. B. ELKINS,
Secretary of War.

REPORT OF MAJOR CHAS. E. L. B. DAVIS, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Milwaukee, Wis., January 7, 1892.

GENERAL: I have the honor to report that as the Government did not assume control of the Portage Lake and Lake Superior canals, Michigan, until August 3, 1891, this improvement did not appear in my annual report for the fiscal year ending June 30, 1891, and in order that provision may be made for carrying on this work in the next river and harbor act the following special report is herewith respectfully submitted.

The Board of Engineers constituted by Special Order 112, paragraph 3, Headquarters, Corps of Engineers, Washington, D. C., August 13, 1886, to consider and report upon certain questions, under act of Congress approved August 5, 1886, in connection with the Portage Lake and River Improvement Company Canal and the Lake Superior Ship-Canal Railway and Iron Company Canal, etc., Michigan, submitted its report December 22, 1886.

In this report six recommendations were made, the first three relating, respectively, to the transfer of the property of the canal companies to the United States, to the abolition of tolls, and to the establishment of harbor lines.

The last three referred to the improvements needed, and are as follows:

(4) That a navigable depth of 16 feet at the lowest known lake level, with a minimum width of 70 feet on the bottom, be obtained by dredging throughout the entire extent of the water way. This will involve the removal of 285,000 cubic yards of sand and hardpan in the canal, at a cost of \$99,000, and 149,000 cubic yards, mostly of soft material, in Portage River, at a cost of \$30,000. To this should be added about \$75,000, roughly estimated, for putting the existing revetment in the canal in serviceable condition, calling for a total appropriation of, say, \$225,000, including contingencies.

Should the future needs of commerce demand an increase in navigable depth to 20 feet at lowest known lake level, it is probable that an increase in width of at least 50 feet will also be necessary, involving new revetments, for which an estimate of \$200,000 would probably not be excessive; the excavation would amount to 989,000 cubic yards of hard and soft material in the canal, at a cost of \$350,000, and 782,000 cubic yards in Portage River, mostly of soft material, which will cost \$180,000.

(5) That the harbor entrance on Lake Superior (map 4) be advanced into the lake to a depth of 30 feet by two piers of crib work loaded with stone; that the new entrance thus made be 400 feet in width and situated in front of the present entrance; that the piers diverge inwardly upon angles of 45° with the axis of the canal to afford interior space to reduce the waves, and that their inner ends be connected with the shore by low piers rising only to the ordinary lake surface, with a view, while excluding sand, to facilitate the escape of waves entering the harbor in storms. Such an entrance would involve 3,940 feet of high piers, at a cost of \$689,000, and 1,400 feet of low piers at a cost of \$70,000, calling, with contingencies, for an appropriation of, say, \$850,000.

(6) That the pier at the Keweenaw entrance be extended to reach water 20 feet in depth by ordinary crib work, about 2,400 feet long, which, with contingencies, will call for an appropriation of, say, \$220,000.

RECAPITULATION.

For opening a through route having a minimum depth of 16 feet and a minimum bottom width of 70 feet							\$225,000
For providing a safe entrance from Lake Superior							850,000
For providing a safe entrance from Keweenaw Bay							220,000
							<hr/> 1,295,000

When the increasing needs of commerce demand a depth of 20 feet an additional expenditure of \$730,000 will be required.

Amount (estimated) required for completion of existing project,\$1,295,000
 Amount that can be profitably expended in fiscal year ending June 30,
 1893 500,000

Very respectfully, your obedient servant,

CHAS. E. L. B. DAVIS,
Major of Engineers.

Brig. Gen. THOMAS L. CASEY,
Chief of Engineers, U. S. A.

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